

REMARKS

This Reply is in response to the Office Action mailed on January 22, 2008 (Office Action). A Petition for Three-Month Extension of Time (with fee) is filed concurrently. Hence this Reply is timely.

Claims 1, 4, 5, 12, 19-22, 24-29, 33, 35-40 and 49-61 are now pending, with Claims 22, 24-29, 33 and 35-40 having been withdrawn from consideration. Claim 1 is the only independent claim which is pending and not withdrawn from consideration.

Applicants wish to thank the Examiner for the thorough search and for the thorough review and analysis of the application, claims, and the prior art.

1. The rejection of Claims 2, 3, 6, 8,9, 10 and 11 under 35 U.S.C. § 112 is believed rendered moot by the cancellation of those claims and the replacement of those claims by claims 49-61 respectively. Claim 2 has been split into two parts as Claims 49 and 50, Claim 3 has been split into two parts as Claims 51 and 52, etc., with Claim 11 being split into three parts as Claims 59-61.

2. The rejection of Claims 1-6, 9, 10, 12 and 21 under 35 U.S.C. § 102(e) based on the document to Lingle (U.S. Patent No. 6,445,503) is respectfully traversed.

First, the disclosure of the Lingle document relates to a heat treatable layer coating system in which a protective layer of NiCrOx is deposited on a silver infrared reflective layer. However, contrary to and distinguished from independent Claim 1, the device described in the Lingle document does not have a second protective layer adjoining this first protective layer. The layers as described herein are identified in the Lingle document at column 2, line 55, through

column 4, line 4 and one example is provided in Table III at the bottom of column 10. In the example in Table III described in the Lingle document, there is a dielectric layer "e" of SnOx, with a thickness of 81.6 nm, on the NiCrOx protective layer "d". The adjacent TiOx layer "f" is NOT a second protective layer for the first silver (Ag) infrared reflective layer "c". This adjacent TiOx layer "f" cannot be a protective layer for the first Ag layer "c" due to the presence of the thick dielectric layer "e" between it (i.e., the TiOx layer "f") and the NiCrOx layer "d". This TiOx layer "f" protects the second silver (Ag) layer "g" during the thermal treatment.

Claim 1, as distinguished from the disclosure in the Lingle document, has the second protective layer adjoining the first protective layer. But since the layer "f" in the Lingle document can not be a second protective layer adjoining the first protective layer "d" in the Lingle document (because of the presence of the layer "e", the SnOx layer, the device described in the Lingle document does not anticipate Claim 1.

Further, Lingle gives no suggestion to put a second protective layer adjoining the first protective layer for the same silver (Ag) infrared reflective layer. There is no teaching in Lingle which might render the claim obvious to one of ordinary skill in the art.

3. The rejection of Claim 11 (now Claims 59, 60 and 61) as obvious under 35 U.S.C. § 103 based on the documents to Lingle and Laird et al, U.S. Patent No. 6,936,347, is respectfully traversed.

First, as noted above, the Lingle document neither anticipates nor renders obvious independent Claim 1.

Second, the Laird et al. document also discloses also a layer system with a protective layer of NiCrOx deposited on the Ag infrared reflective layer, and therefore neither describes nor suggests depositing a second protective layer adjoining the first protective layer. Rather, in the

layer system described in the Laird et al., document, a thick dielectric layer of SnO_2 is deposited directly on the NiCrOx protective layer. Since the Lingle document, alone or in combination with the Laird et al document, does not render the invention of Claim 1 obvious, this combination of documents can not render the invention of dependent Claims 59, 60 or 61 obvious notwithstanding that the Laird et al document describes a NiCrOx layer which may be in the range of 5 Å to 100 Å.

4. The rejection of Claim 19 as obvious under 35 U.S.C. § 103 based on the documents to Lingle and Guiselin, U.S. Patent No. 5,595,825 is respectfully traversed.

First, as noted above, the Lingle document neither anticipates nor renders obvious independent Claim 1.

Second the Guiselin document discloses a layer system with three functional Ag (silver) infrared reflective layers. On each Ag layer, there is a NiCr protective layer, but neither describes nor suggests depositing a second protective layer adjoining the first protective layer. Rather, in the system described in the Guiselin document, a thick dielectric layer of Ta_2O_5 or SnO_2 is deposited directly on the NiCr protective layer. Since the Lingle document, alone or in combination with the Guiselin document, does not render the invention of Claim 1 obvious, this combination of documents can not render the invention of dependent Claim 19 obvious.

5. The rejection of Claim 20 as obvious under 35 U.S.C. § 103 based on the documents to Lingle and Szczyrkowski et al., U.S. Patent No. 5,279,722, is respectfully traversed.

First, as noted above, the Lingle document neither anticipates nor renders obvious independent Claim 1.

Second, the Szczyrkowski et al. document discloses a low-emissivity coating having a special blocker on the Ag layer composed of two layers, namely Pd or Pt and Ti or Cr or an alloy, so as to give a high resistance to moisture and to chemical attack to the coating, especially to protect it during the summer months. But this document neither describes nor makes obvious the provision of the second protective layer adjoining the first protective layer.

Since the combination of the Lingle and Szczyrkowski et al. documents does not render the invention of Claim 1 obvious, this combination can not render the invention of dependent Claim 20 obvious. Furthermore, it should be noted that the combination of the two documents may be improper as applied in the Office Action since the materials of the proposed first layer, namely, Pd or Pt, have electronegativity higher than Ag. Indeed, as shown on page 3 of Applicants' English language specification, Ag has an electronegativity value of 1.93, whereas the electronegativity value of Pd is 2.20 and the electronegativity value of Pt is 2.28, both clearly higher than the value for Ag rather than lower as set forth in the independent claim. Thus as to this feature it can not be disputed that the Szczyrkowski et al. document teaches away from the present invention and therefore, it is submitted that it is improper to pick and choose elements from the prior art while ignoring the prior art as a whole, and thus use a hindsight analysis for an obviousness rejection.

Finally, it should be pointed out that according to the teaching of the Szczyrkowski et al. document, there is a first protective layer on the silver layer, comprising a precious metal (Pd or Pt), which is not easily oxidizable and which is somewhat similar to the function layer by having also some good infrared reflective properties. There is no teaching about electronegativity of the protective material. Therefore, there is no reason or incentive based on the Szczyrkowski et al. document for one of ordinary skill in the art to look to this document for potential substitute

materials for the protective layers, in particular Pd and Pt of the first layer, by materials which, in fact, will not even satisfy the electronegativity requirements of our invention.

In addition, according to the teaching of the Szczyrkowski et al., document, only a precious metal is suitable to form the first protective layer: "*The metal blockers or sub oxide blockers of metals such as Al, Cu, Cr, Zr, Ti, Ni, Zn, Ta and others and their alloys evidently do not sufficiently protect the present low-e system against corrosion.*" (Column 1, lines 53-56). This is also contrary to Applicants' disclosure which indicates that NiCr may be used as the first protective layer. While this language is not in Applicants' independent Claim 1, there is no prohibition against considering this factor when determining if the entire teaching of the Szczyrkowski et al. document is sufficiently far removed from Applicants' disclosure (as it is here) such that one of ordinary skill in the art would not rely on such document in attempting to solve any problems described in the present application.

CONCLUSION

Based on the foregoing, reconsideration, withdrawal of all rejections, and allowance are respectfully solicited.

Should the Examiner be of the opinion that a telephone conference would expedite the prosecution of this application, the Examiner is encouraged to contact Applicants' attorney at the telephone number given below.

Although no fees are believed to be due, the Commissioner for Patents is hereby authorized to charge any deficiency in fees due with the filing of this document and during prosecution of this application to Deposit Account No. 50-0951.

Respectfully submitted,

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